

WHAT IS CLAIMED IS:

1. A method of transferring generic data acquired at a remote location to a central database based on e-mail communication, comprising:

- (a) encapsulating the acquired data in an electronic mail message;
- (b) sending the electronic mail through a public or private network to a central database server without use of gateway architecture by providing an architecture for Internet communication software for embedded platforms, wherein the architecture is based on a network of software multiplexers and demultiplexers controlled by an integrated protocol engine;
- (c) extracting the data from the electronic mail message by the central database server; and
- (d) storing the extracted data in the central database.

2. A device for transferring generic data acquired at a remote location to a central database based on e-mail communication, the device comprising:

means for encapsulating the acquired data in an electronic mail message at the remote location;

means for sending the electronic mail through a public or private network to a central database server,

wherein the acquired data is communicated to the database server without use of gateway architecture, wherein the acquired data is communicated using an architecture for Internet communication software for embedded platforms, and wherein the architecture for Internet communication software for embedded platforms is based on a network of software multiplexers and demultiplexers, controlled by an integrated protocol engine.

3. A computer program for transferring generic data acquired at a remote location to a central database based on e-mail communication, configured to perform a method comprising:

- extracting data from an electronic mail message; and
- storing the extracted data in the central database,

wherein the acquired data is communicated to the database server without use of gateway architecture, wherein the acquired data is communicated using an architecture for Internet communication software for embedded platforms, and wherein the

architecture for Internet communication software for embedded platforms is based on a network of software multiplexers and demultiplexers, controlled by an integrated protocol engine.

4. A software architecture for use in structuring Internet communication software for embedded platforms, the architecture comprising:

- a plurality of software multiplexers comprising a plurality of multiplexer ports, wherein each multiplexer port is identified by a unique port identifier number;

- a plurality of software demultiplexers;

- a plurality of protocol modules, wherein the multiplexers and protocol modules are configured as nodes in a software network, wherein the nodes are assigned to a layered structure based at least on their functional properties, and wherein the multiplexer port identifiers at each layer are used to describe a path through the network;

- an integrated protocol engine configured to control the multiplexers, demultiplexers, and protocol modules, and to communicate with and control the nodes by sending and receiving messages through the network; and

- a plurality of data buffers configured to transport data in the network, wherein the messages and data buffers are routed through the network using a path descriptor which uniquely qualifies each node.

5. A software architecture for use in configuring a device for transferring generic data acquired at a remote location to a central database based on e-mail communication, wherein the device is configured to encapsulate the acquired data in an electronic mail message at the remote location, and to send the electronic mail through a public or private network to a central database server, the software architecture comprising:

- a graphical-user interface, running on a personal computer which communicates with the device through an RS-232 serial interface by exchanging messages with the application software running on the device;

- a host protocol engine running on the personal computer and a target protocol engine running on the embedded processor of the device, configured to implement a serial communications protocol for exchange of the messages, wherein the host protocol engine is an ActiveX object which handles the protocol-related serial communication through the RS-232 serial interface, and wherein the target protocol engine is a processor-

independent software module configured to pass a message received from the host protocol engine to target application software for further processing.

6. The device of Claim 2, wherein the database server configures and manages the device according to a method comprising:

configuring the device to receive electronic mail messages from a mailbox at the server by means of the POP3 protocol, wherein the messages contain configuration data; and

evaluating the messages by the device, and adjusting the locally stored configuration settings,

wherein the messages are communicated without use of a gateway architecture to the device by providing the architecture for Internet communication software for embedded platforms.